

**ABSTRACT**

A method of improving the material properties of a composite by electrodepositing various polymers, organic compounds or inorganic compounds onto each individual carbon (graphite) fiber strand, whether individual fiber or as a fabric to form an homogeneous chemically-bonded composite as opposed to the formation of a heterogeneous, non-chemically bonded composite. Thus, electrodeposition forms a unique discrete interface at the molecular layer (nanolayer) between the reinforcement (fiber) and the matrix (resin) over as opposed to any previous resin infusion process.